

Serial No. 10/516,084
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In the claims:

1-35 (cancelled).

36. (new) A detector adapted to detect degradation of a ductile metal component, the detector comprising:

a monitoring structure applied to a surface of a ductile metal component; and

a monitoring device adapted for interrogation of the monitoring structure;

wherein the monitoring structure comprises an electrical conductor formed of a material that is more brittle than the ductile metal component so that a bending of the ductile metal component results in a crack in the electrical conductor causing a change in an electrical property of the monitoring structure detectable by the monitoring device as a degradation of the component by bending.

37. (new) The detector of claim 36, wherein the monitoring structure comprises resonant circuit comprising the electrical conductor and a capacitor, and wherein the monitoring device comprises an antenna for interrogation of the monitoring structure via electromagnetic signal exchange.

38. (new) An assembly comprising:

a ceramic heat shield deemed acceptable only in the absence of any crack propagating from an edge of the heat shield toward a center of the heat shield exceeding a defined critical length;

a monitoring structure applied to the heat shield and comprising an electrical conductor attached to the heat shield at a distance equal to the critical length from the edge of the heat shield; and

a monitoring device adapted for interrogation of the monitoring structure;

wherein a crack propagating from the edge of the heat shield toward the center of the heat shield exceeding the critical length will cause a crack in the electrical conductor detectable by the monitoring device for identifying the heat shield as defective.

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39. (new) The assembly of claim 38, wherein the electrical conductor is formed in the shape of a ring around the center of the heat shield at the critical length distance from the edge.

40. (new) The assembly of claim 38, wherein the monitoring structure comprises resonant circuit comprising the electrical conductor and a capacitor, and wherein the monitoring device comprises an antenna for interrogation of the monitoring structure via electromagnetic signal exchange.

41. (new) The assembly of claim 38, wherein the monitoring structure is applied to a surface of the heat shield that is not accessible in an installed state in a gas turbine engine.

42. (new) The assembly of claim 40, wherein the monitoring structure is applied to a surface of the heat shield that is not accessible in an installed state in a gas turbine engine.